They were all relieved except Cases No. II. and No. IV. The former soon passed from observation with grave symptoms of a cerebro-spinal character. The latter, when first examined, manifested the greatest loss of vision of any of them; fingers could be counted from five to six feet only, and internal examination revealed considerable inflammatory exudation into papillæ and retinæ, which threatened their atrophy with loss of function beyond recovery. Cases of this kind demand prompt recognition as to their etiology (before vision is too much impaired by the internal eye disease) in order that they may be successfully treated and relieved. Partial loss of vision, and inability to use the eyes in young healthy-looking females, *without external eye disease*, always suggest to my mind the probabilities of menstrual disturbances, and it is inquired about. As many more cases could be presented as the foregoing; but it is decided not to do so because they were not fully recorded, and could only numerically enlarge the observations I wish to present. Young school-girls often manifest asthenopia (weak and painful sight) about the time their menses are being established, and especially if their menses become irregular from any cause, which may produce partial or complete suppression for an indefinite time. I will not further pursue this subject to present illustrative cases, but state that sometimes they manifest decided congestion of optic papillæ and retinæ, and others no internal eye lesion, with the exception of strain of their accommodation which is common to all of these cases, for they have some refractive deformity of their eyes, which, sooner or later, causes their muscles of accommodation to rebel from their over-taxing and too continuous work.

The irregularities of the menopause period is often complicated with asthenopia and pathological lesions of the fundus of the eye. Several cases of this nature, with disease of the optic nerve and retina from their incipiency to their complete atrophy, have been under observation recently.

Only uncomplicated cases as to their etiology have been selected for this paper, and all others excluded for various reasons, but especially for brevity, and to definitely establish the intimate and practical relations existing between eye diseases and menstrual disorders.

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## ARTICLE V.

### ON THE MILD FORMS OF CONTINUED FEVER WHICH PREVAIL IN WASHINGTON, WITH SUGGESTIONS AS TO THEIR NATURE.

By W. W. JOHNSTON, M.D., Prof. of the Theory and Practice of Medicine, Medical Department of the Columbian University; one of the Physicians to the Children's Hospital.

THE forms of continued fever which prevail in Washington may be classed as follows:—

I. Cases of typhoid fever with well-defined pathognomonic symptoms, the temperature reaching and being sustained at a high point—104° F.—and above, during the fastigium, ending in recovery in from four to six weeks, or terminating fatally from cerebral or intestinal complications or from hyperpyrexia.

II. Milder cases of typhoid fever in which the attack is shorter, the number of the associated symptoms is fewer, and their intensity less marked. A typical fever curve lasting eighteen to twenty-eight days is accompanied by one or more characteristic symptoms of no great prominence. The temperature may be high, 104°, during the early days of the fastigium, but there is after the eighth to the twelfth day a tendency to decline, and the mean of the high points during the acme will not be above 102.5°. Death may occur from accidents, as intestinal hemorrhage or perforation, or from the exhaustion of a relapse.

III. The series of cases included under a third class are those which have none of the symptoms clearly indicative of typhoid fever; there are no evidences of cerebral or intestinal disorder; constipation is the rule. The evolution of the attack is usually slow, the convalescence tedious, and marked by anæmia, emaciation, and debility. The course of fever lasts eighteen to twenty-one days, but the highest point may not be above 102°. In many cases the body heat is so low that without the thermometer fever could oftentimes not be detected. Yet a careful study shows that there is a preservation throughout of the character of the typhoid type. The patient lies in bed suffering but little, and wondering why he is kept there, but an indiscretion in diet, or a relaxation of the discipline suited to the case, will soon cause an elevation of temperature, with a consciousness of illness. When quinine is administered it lowers the temperature, but does not arrest the disease. During early convalescence, if solid food be given too soon, a relapse may occur which lasts as long and may be more serious than the original attack. Death may result from accidents, as perforation of the intestine or hemorrhage.

IV. In this class are embraced cases which last less than eighteen days, in which the fever is also of the continued type. In most respects they resemble the cases under the preceding class, except that the onset of the illness is sometimes sudden; there may be a rigor on the first day. The fever line reaches full development earlier, and then pursues a course like that of the cases in Class III., with the exception that it does not last so long, and that it is subject to greater departures from the typhoid type. Convalescence begins in from twelve to eighteen days. If a high point of temperature is reached, it lasts for a day or two only, when the patient is subjected to proper treatment by rest and diet. Quinine does not shorten the attack. Convalescence is slow, and a relapse may take place.

All the forms of continued fever occurring in Washington may be placed under one or the other of these divisions. While the diagnosis of cases in Class I. and II. is easily and correctly made, much difference of opinion prevails as to the determination of the nature of cases which do not conform to the typical description of typhoid fever. In fact, the prevailing opinion is that mild forms of fever, without abdominal or cerebral symptoms, are of a malarial nature, this belief finding its expression in the term "bilious," or, more frequently, "remittent fever." This opinion is based upon the following reasons:—

1. The general prevalence at the same time of intermittent fever and of continued fevers of the forms described.

2. The coincidence of undoubted malarial disease and mild continued fevers in malarial districts.

3. The supposed existence of intermittent features in the early and later stages, and of decided remissions in the fastigium of the continued forms.

4. The supposed benefit derived from quinia in shortening the attack, and in converting a continuous into an intermittent form of fever.

5. The absence of the typical symptoms of typhoid fever.

If these arguments are examined in detail, and tested by a strict observation of facts, quite opposite conclusions can be reached.

1. The prevalence of malarial illness and of continued fevers of doubtful nature in the same season of the year does not support the idea of their identity. The season of intermittent fever, the most typical form of malarial disease, is also the time when typhoid fevers of the severest type most prevail. In the year ending June, 1879, in the District of Columbia, there were seventy-four deaths from typhoid fever; of these fourteen were in July, ten in August, fourteen in September, fourteen in October, two in November, one in December, two in January, two in February, two in March, five in May, and five in June. In July, August, September, and October there were *fifty-two* deaths, and in the remaining eight months only *twenty-two* deaths.

2. The presence of continued fever side by side with malarial disease in the same house and in the same part of the city does not establish their identity. Typhoid fever is found everywhere, irrespective of the proximity to the sources of malarial poison, and, therefore, necessarily is found in malarial districts. The general distribution of typhoid fever in Washington is well shown in the admirable map published by the Health Officer in the Report of 1880.

3. A careful testing of the temperature changes in the early stages, and during the progress and decline of these fevers, will not show intermissions, or decided remissions at any time. *It is the neglect to use the thermometer, and to rely upon it,* rather than on the unskilled observation of the patient or of his attendants, which originates and sustains this error.

4. Quinia has great potency in reducing temperature, but its effects cannot be offered as reasons for the diagnosis of remittent fever, unless the fever exacerbations are stopped and the normal point is reached and main-

tained through its influence. The mistake is often made of taking the remissions due to the drug for the oscillations of the disease. If the fever is only lowered, the daily rise recurring when the remedy is not given, while the general features of the disease remain unchanged, it may be concluded that the attack is not malarial. Such, indeed, is the result when quinine is administered in the fevers under consideration.

5. The absence of the symptoms which are more distinctive of typhoid fever is usually made the ground for calling the attack "malarial," and hence "remittent" fever. And as these two—typhoid and remittent fevers—are the only idiopathic continued fevers commonly met with in this city, a case must belong to the one or the other category. But is this exclusion of typhoid fever based upon just and sufficient grounds? We admit in the contagious class of zymotic diseases a gradual diminution of intensity, due to the modified virulence or the smaller dose of the *contagium vivum.* In the eruptive fevers there is a regular gradation in the number and severity of the symptoms, from the malignant to those so mild that the true nature of the slight indisposition is recognized, as in diphtheria and scarlet fever, by its sequelæ alone. If a study is made of a series of cases of continued fever of diminishing intensity, as are represented in the four classes enumerated above, it will be seen that one case differs from that which preceded it, by losing one symptom, or by having that symptom in a less marked form; and thus in the whole series the same disease is deprived one by one of its characteristics, but retains to the last the fever which adheres more or less to the typhoid type, with its daily remissions and exacerbations. The study of the temperature best illustrates the minimizing of intensity. Preliminary to such a study, the rule laid down by Wunderlich must be forgotten, that we can exclude typhoid fever, if, "in young adults . . . during the fastigium . . the evening temperature keeps under 39.6° C. (103.28° F.);" and again, "We may exclude typhoid fever, when between the fourth and sixth day, the evening temperature in a child, or adult under middle age, never reaches 39.5° C. (103.1° F.), and, indeed, if it has failed to do so two or three times." This law was announced fifteen years ago, and has without doubt influenced observation and delayed the general recognition of the milder forms. Wunderlich relieved himself to some extent of the dogmatism contained in this assertion by saying that, "in this pre-eminently typical disease not a single rule can be laid down which is not subject to exceptions." The teachings of Liebermeister, Jürgensen, Cayley, Wilson, and others have shown that *there is no minimum limit to the temperature of typhoid fever*, and that no matter how low the elevation is in the fastigium, the disease may nevertheless be of this nature. In cases which I have observed and kept records of during the last thirteen years, some of which were published in an article on "Mild Forms of Typhoid Fever," in the *American Journal of the Medical Sciences* for October, 1875, there

can be found a descending scale of febrile intensity which, beginning with the highest temperatures, ends with maximum elevations of about 99.5°.

The occurrence during the progress of the mildest case of fatal accidents, which definitely fix the nature of the case in question, aids in the diagnosis of cases like them. I have been so strongly impressed by cases of this kind, that I look upon the mildest form as requiring closer attention and better nursing than those of a more serious nature, as the patient as well as the disease must be kept under strict discipline. The following history will illustrate this point:—

Mr. H., after complaining of ill health for three weeks, was taken with fever on June 23, 1877. He went to bed on the following day, suffering from headache, pains in the limbs, loss of appetite, and great weakness. The bowels were constipated. I saw him on June 27th; the temperature in the evening was 101°, pulse 100. The tongue was coated, the abdomen was not tympanitic, and the bowels were moved by enema only. There were no rose spots, and no delirium. Rest in bed and liquid diet ordered. June 28. Temperature A.M. 101°; pulse 108. P.M. temperature 102°; pulse 110. June 29. Temperature A.M. 101.2°; pulse 100. P.M. temperature 102°; pulse 112. June 30. Temperature A.M. 101.6°; pulse 110. P.M. temperature 102.4°; pulse 116. For one week from this date his condition changed daily for the better; the temperature descending, and the pulse becoming less frequent. He did not seem ill, and did not complain. The bowels were moved by enema or by castor oil every alternate day. Eructation of gas was the only symptom which annoyed him. The treatment of absolute rest and liquid nourishment was continued. No other symptoms than those described were developed.

*July* 8. The sixteenth day of his attack, the temperature was 99.8° F., and an early convalescence was predicted. Rest and the same diet of liquids enjoined.

*9th.* At 8 A.M. he was taken with vomiting, and a violent pain in the abdomen, which soon became tense and painful; he was restless and very thirsty. The temperature had risen to 104° and continued to rise, and the pulse was 154. During the day he sank into collapse, with cold sweats, and died at 10 A.M. on the following day. The diagnosis of typhoid fever was justified by symptoms pointing so clearly to intestinal perforation.

In the epidemic of typhoid fever which prevailed in Washington in September and October, 1881, abundant opportunity was given to examine this question, as mild forms of fever predominated and were seen in every phase of intensity. The facts properly classified and studied in their mutual relations lead inevitably to the conclusion, that there is no justice, but *positive error in affixing the term "malarial" to all negative and doubtful cases of continued fever*, as is the habit in diagnosis wherever the malarial and typhoid disease appear side by side. The escape from the dilemma of uncertainty by offering a hybrid name to doubtful cases is illogical, because unnecessary and unsupported by any facts which have so far been presented. The conception of typho-malarial fever has come to be a device for easing one's self of the responsibility of accuracy in diagnosis, and gives us a no better working theory, as far as practical results go, than we had before.

The conclusion, that a large number of *negative and doubtful forms of continued fever occurring in Washington are mild forms of typhoid fever*, is therefore supported by theoretical considerations as well as by the facts. With the filling in of marsh land, and the paving and draining of the streets, Washington is rapidly losing the conditions which gave origin to marsh poison, and is acquiring those conditions which give rise to the virus of typhoid fever. In London, along the banks of the Thames, where ague formerly prevailed, enteric fever is the common disease. (Harley, in *Reynolds's System of Medicine.*) "Enteric fever takes the place of malarial fevers as the population becomes more dense." (Wilson.) Such a change is now going on in Washington, and the problem is here presented, as in other large and densely populated cities, of eradicating this growing scourge. The circumstances of origin no doubt vary with localities, and much good would be derived from a close study of the topographical and geographical differences of typhoid fever, which has a more extended distribution throughout the world than any other of the zymotic diseases. In the Report of the National Board of Health, for Saturday, November 12, 1881, containing mortuary statistics, compiled from the weekly consular reports, deaths from typhoid fever are reported from Havana, Rio Janeiro, Rosario (Argentine Confederation), La Guayra (Venezuela), Dublin, Glasgow, Dundee, London, Cardiff, Lyons, Amsterdam, Berlin, Breslau, Brunswick, Cologne, Leipsic, Dresden, Vienna, Bucharest, Seville, Malaga, Rome, and Shanghai. Not only is it found in North and South America, the West Indies, England, Ireland, Scotland, the Continent of Europe, Australia, Asia, and Africa, but it is one of the most fatal diseases wherever it exists, sometimes the most fatal even in the homes of cholera and yellow fever. In Algiers, for the four weeks ending July 31, 1881, typhoid fever stands first on the list of zymotic diseases in fatality; phthisis pulmonalis and bronchitis alone out of all diseases causing more deaths. In Buda-Pesth, Hungary, for weeks ending August 13th and 20th, typhoid fever heads the list of deaths before smallpox and scarlatina.

In Calcutta, for the week ending July 30, 1881, typhoid fever caused sixteen deaths; cholera, nine deaths.

In Melbourne, Australia, during June, 1881, typhoid fever resulted fatally in sixteen cases, causing two-thirds as many deaths as all the other zymotic diseases.

In Rio Janeiro, for three weeks ending August 20, 1881, there were as many deaths from typhoid fever as from yellow fever, and this in the home of yellow fever. "Pernicious fever" had three times as many deaths as either.

In Paris, for one week ending September 3, 1881, there were as many deaths from typhoid fever as were reported in Washington for the whole year 1880.

In the United States it is one of the most fatal, sometimes the most fatal, of the zymotic diseases. From the mortality lists of the cities requiring certificates of death, for the week ending September 19, 1881, there were 201 deaths from typhoid fever, 137 from diphtheria, 118 from malarial disease, 88 from scarlet fever, 61 from smallpox; that is, typhoid fever caused 83 more deaths than malarial fevers, and 64 more than diphtheria.

For the week ending September 9, 1881, typhoid fever caused in the same cities 162 deaths, diphtheria 161, malarial diseases 88, scarlet fever 51, smallpox 72; here, too, typhoid fever heads the list.

For week ending October 15, 1881, there were 213 deaths from typhoid fever, 89 from malarial diseases, diphtheria 181, scarlet fever 72, smallpox 91; that is, typhoid fever had twice as many deaths as malarial fever, at a time when miasmatic influences are most prevalent; 32 more deaths than diphtheria, and three times as many as scarlet fever.

For week ending October 29th, typhoid had 213 deaths, malarial fevers 105, diphtheria 216, scarlet fever 91, smallpox 102. Typhoid had twice as many deaths this week as malarial fevers, but three less than diphtheria.

But what is a more remarkable showing than this is contained in the Report of the Health Officer of New York for quarter ending September 30, 1880, and September, 1881. According to this statement, the most fatal zymotic disease, in proportion to the number of cases attacked, was typhus fever. The next most fatal was typhoid fever; and the third was diphtheria. Allowing for errors from failure to report cases of typhoid fever (a neglect much less likely to occur with typhus fever, as the cases are few, many of them being under treatment in hospitals), it is still evident that typhoid fever is becoming the most fatal epidemic and contagious disease of this country.

In an interesting report on typhoid fever in Wheeling, West Virginia, made by Dr. S. L. Gepson, and published in *The Medical News* of June 3, 1882, there is shown to have been a great increase in the prevalence of this disease during the last two years in that city.

The mortality tables for Washington and the District of Columbia for the year 1880 show that there were 84 deaths from typhoid fever, being 1.99 per cent. to total mortality. In Wheeling, for the same year, it was 8.81 per cent. Leaving out diarrhœa, with a mortality of 157, cholera infantum with 198 deaths, the extraordinary death-rate of which is limited to infants and children, typhoid fever caused more deaths in Washington during the year than any other zymotic disease. Scarlet fever has 28, diphtheria 27, whooping-cough 50 deaths. Typhoid fever, therefore, destroyed three times as many lives as scarlet fever or diphtheria.

The time is, doubtless, quite far removed when we can hope to stamp out typhoid fever by finding and destroying the poison-germ before it begins its deadly flight and diffusion. Improvements in drainage, in cleanliness, in the general healthfulness of a city do not destroy it, as is fully demonstrated in Washington. There is no city in the world, perhaps, which is kept more rigorously clean than this, and where the work of systematic improvement has been accomplished more rapidly. There is no commerce, traffic, or manufactures to generate disease from filth and the overcrowding of a large labouring class. The negro population, it is true, live under the worst sanitary conditions, and, but for this, the death-rate would be much lower than it is. But, notwithstanding this drawback, epidemic and contagious diseases have here no great severity or prevalence. And yet typhoid fever is not decreasing, but is becoming, as in other Atlantic cities, *the* endemic fever.

The following conclusions include the chief points which it is desired to draw attention to in this communication:—

1. As malarial diseases are lessening, typhoid fever is increasing in Washington, the increase being largely due to the greater number of cases of mild and irregular type, which, if properly treated, are rarely fatal.
2. Mild and irregular forms of typhoid fever are still erroneously regarded as malarial in nature.
3. By adopting a more rigid discipline and more appropriate treatment, based upon this conclusion, to mild forms of fever of negative character, now called "malarial fevers," "bilious fevers," "remittent fevers," or "gastric fevers," the mortality from continued fever would be much diminished.

## ARTICLE VI.

## A CASE OF AMPUTATION AT THE HIP-JOINT, IN WHICH PROF. TRENDELENBURG'S METHOD OF CONTROLLING HEMORRHAGE WAS RESORTED TO WITH RECOVERY OF THE PATIENT.

By THEODORE R. VARICK, M.D., Surgeon to Jersey City Charity Hospital, and Medical Director of, and Surgeon to, St. Francis's Hospital, Jersey City, N. J.

WM. F., æt. 13 years, was admitted to St. Francis's Hospital February 14, 1882, on account of a comminuted fracture of the right leg and thigh. The integument being intact, it was determined to make an effort to save the limb. The endeavour proved abortive, as profuse suppuration ensued, with necrosis of the bones, accompanied with severe hectic symptoms. A consultation of the hospital staff was held, and it was decided to amputate at the coxo-femoral articulation.

In view of the extreme prostration of the patient, and the manifest necessity of reducing the loss of blood to a minimum, I determined to resort to Prof. Trendelenburg's method of controlling hemorrhage in this operation. I accordingly had manufactured by Tiemann & Co., of New